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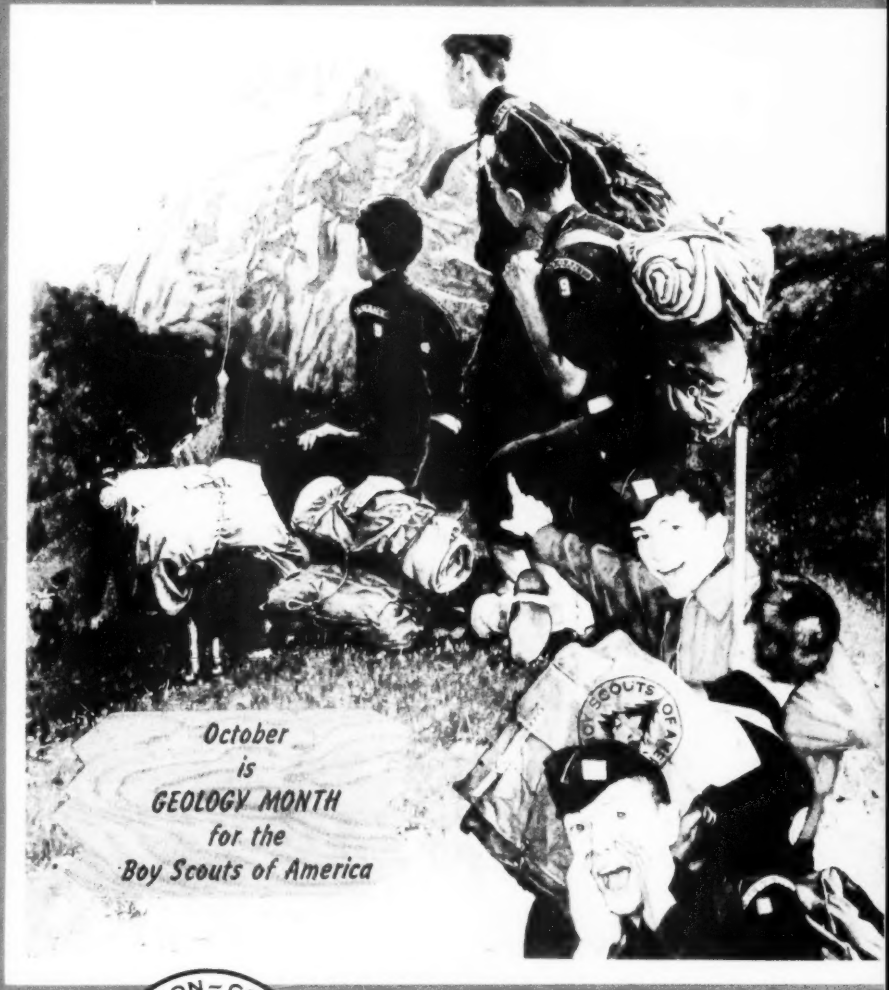

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Calendar

Cooperation of Society Secretaries in supplying meeting notices for GEOTIMES calendar is requested.

Sept. 3-13, 1957—PHYSICAL OCEANOGRAPHY & COASTAL ENGINEERING, Special course, A. & M. Coll. of Texas, College Station. Final reg. date: July 6, '57. Apply: R. M. Adams, Dept. of Oceanography & Meteorology, A. & M. Coll. of Tex., College Station, Tex.

Sept. 3-14, 1957—INTERNAT. UNION OF GEODESY & GEOPHYSICS, 11th Gen. Assembly, Toronto, Canada. Add.: Dr. J. A. Jacobs, 49 St. George St., Toronto, Ont., Canada.

Sept. 5-7, 1957—NEW MEXICO GEOL. SOC., Eighth Ann. Field Conf. in the Durango-Silverton-Ouray area of S.W. Colo. Limited to 150. Write: Mrs. Marian Burks, Box 652, Socorro, N.M.

Sept. 8-Oct. 9—SIXTH COMMONWEALTH MINING & METALLURGICAL CONG., visiting mining industries from British Columbia to Nova Scotia on invitation of Canadian Inst. Mining & Metallurgy. Write Exec. Sec. 6th Commonwealth M. & M. Cong., 837 W. Hastings St., Vancouver 1, B.C., Canada.

Sept. 9-10, 1957—AMER. CERAMIC SOC., Basic Science Div., State U. of N.Y. Coll. of Ceramics, Alfred Univ., Alfred, N. Y.

Sept. 9-12, 1957—AMC, Met. Min. & Ind. Mins. Conv., Hotels Newhouse & Utah, Salt Lake City.

Sept. 10-13, 1957—ALASKAN SCIENCE CONFERENCE, 8th, Anchorage, Alaska. Write airmail to Wm. B. Page, Gen. Chrmn., 8th Alaska Sci. Conf., Arctic Health Res. Center, Box 960, Anchorage, Alaska.

Sept. 10-13, 1958—4th INTRNTL. CONG. on Carboniferous Stratig. & Geol., Heerlen, Netherlands. Also 1st Intrntl. mtg. on Coalpetrology.

Sept. 12-14, 1957—WYOMING GEOLOGICAL ASSOCIATION, 12th Ann. Field Conf., in SW Wind River Basin, hdqtrs. at Lander, Wyo. Write: Mike S. Johnson, Box 2249, Casper, Wyo.

Sept. 13-14, 1957—ARDMORE GEOLOGICAL SOCIETY Field Conference; Criner Hills-Lake Murray Area of South-central Oklahoma. Write: R. B. Harrington, P.O. Box 1099, Ardmore, Okla.

Sept. 19-21, 1957—KANSAS GEOL. SOC. 21st Ann. Field Conf., to study Pennsylvanian of East Kans. Write T. G. Bush, 807 Central Bldg., Wichita, Kansas.

Sept. 20-Oct. 2, 1957—PAN INDIAN OCEAN SCIENCE Congress, Tananarive, Madagascar.

Sept. 23-24, 1957—CONFERENCE ON FLUID THROUGH POROUS MEDIA, School of Petroleum Engineering, U. of Oklahoma. Write: Prof. Chas. G. Dodd, Conference Chairman, Norman, Okla.

Oct. 2-4, 1957—AM. SOC. PHOTOGR., Semi-Ann. Mtg., Chase-Plaza Hotel, St. Louis, Mo.

Oct. 4-6, 1957—NINTH INDIANA GEOLOGIC FIELD CONFERENCE on rocks associated with the Mississippian-Pennsylvanian unconformity in SW Indiana. Sponsored by Ind. G.S. & the Dept. of Geol. of Ind. Univ. Spring Mill State Park.

Oct. 4-6, 1957—49th ANNUAL NEW ENGLAND INTERCOLLEGIATE GEOL. CONF., in the environs of Amherst & central Mass. Spons. by 4-Coll. Geol. Depts., George Bain, Amherst Coll., 1957 Chrmn.

Oct. 6-9, 1957—AIME: SOCIETY OF PETROLEUM ENGINEERS, Fall Meeting; Adolphus, Baker & Statler Hotels, Dallas, Texas.

Oct. 9-11, 1957—AIME: FUELS CONF., Coal Div., Chateau Frontenac, Quebec City.

Oct. 15-18, 1957—SOUTHEASTERN STATES MINING CONF., sponsored by Fla. Sect. AIME & the Soc. of Min. Engrs. of AIME, Hillsboro Hotel, Tampa, Fla.

Oct. 17-18, 1957—AIME: SOUTHERN CALIF. PETR. Sec. Fall Meeting, Biltmore Hotel, Los Angeles, Calif.

Oct. 17-19, 1957—FOUR CORNERS GEOLOGICAL SOC. FIELD CONFERENCE, 2nd Gallup New Mex. For information write P. O. Box 615, Albuquerque, N. M.

Oct. 30-Nov. 1, 1957—ROCKY MTS. MINERALS CONF. AIME, Denver, Colo.

Oct. 31-Nov. 1, 1957—AAPG, Biennial Mid-Continent Regional Mtg., Mayo Hotel, Tulsa, Okla.

Nov. 3, 1957—SVP ANN. MTG., Acad. Nat. Sci., Philadelphia, Pa.

Nov. 4-5, 1957—SVP Technical Sessions, with GSA, etc., Atlantic City, N. J.

Nov. 4-6, 1957—GSA, ANN. MTG., Atlantic City, N. J. Geochem., MSA & PS ann. mtgs. in conjunction.

Nov. 6-8, 1957—GULF COAST ASSOC. OF GEOL. SOCIETIES, 7th Ann. Mtg., Roosevelt Hotel, New Orleans, La.

Nov. 7-8, 1957—AAPG, PACIF. SECT., Los Angeles, Calif.

Nov. 7-8, 1957—SEGp, PACIFIC COAST SECTION, Ambassador Hotel, Los Angeles, Calif. Write: J. A. Hugus, Western Gulf Oil Co., 900 Wilshire Blvd., Los Angeles.

Nov. 11-14, 1957—SEGp, 27th ANNUAL MEETING, Statler-Hilton Hotel, Dallas, Texas.

Nov. 18-Dec. 9, 1957—9TH PACIFIC SCIENCE CONGRESS, Pacif. Sci. Assoc., Chulalongkorn University, Bangkok, Thailand.

Dec. 2, 1957—AMC, Ann. Membership Mtg., Plaza Hotel, New York City.

Dec. 26-31, 1957—AAAS, Nat. Mtg., Indianapolis, Ind.

Feb. 16-20, 1958—AIME, ANNUAL MEETING, Hotel Statler, New York City. SEcG technical meetings held in conjunction.

Mar. 10-13, 1958—AAPG, ANNUAL MEETING, Biltmore Hotel, Los Angeles, Calif.

Apr. 27-30, 1958—AAPG, ROCKY MTN. SECTION, 8th Ann. Conv., Industrial Bldg., Natrona County Fairgrounds, Casper, Wyoming.

May 5-7, 1958—AGU, Thirty-Ninth Ann. Mtg., Nat. Acad. Sci., Washington, D. C.

1960—XXIst INTERNATIONAL GEOLOGICAL CONGRESS, Copenhagen, Denmark. Field excursions to Scandinavian countries.

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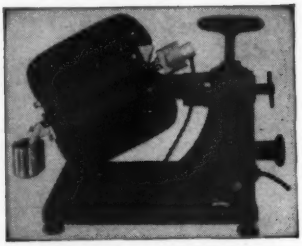

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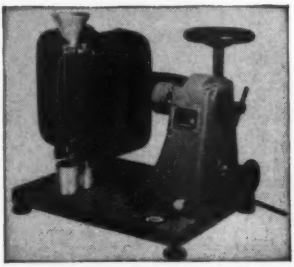

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Professional News Magazine

Published by THE AMERICAN GEOLOGICAL INSTITUTE

Robert C. Stephenson, EDITOR

Kathryn Lohman CIRCULATION MANAGER

Vol. II, No. 3 September 1957

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GEOTIMES is published monthly by the American Geological Institute at Williams & Heintz Lithograph Corporation, Washington, D. C. Editorial, Circulation and Advertising Offices are at 1515 Massachusetts Ave., N.W. Address all correspondence to 2101 Constitution Ave., N.W., Washington 25, D. C.

Subscriptions: Distributed to members of member societies as a part of their societies' membership. Non-member, U.S.A. and Possessions, Canada and Mexico, $2.00 per year; elsewhere, $2.50 per year.
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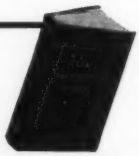

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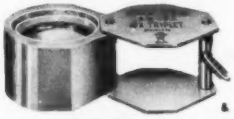

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The Greatest Show on Earth

The National Headquarters of the Boy Scouts of America are referring to Geology Month in Scouting as the *"Greatest Show on EARTH."* There are 68,000 Scout troops and explorer units and over 3,500,000 Scouts and 1,000,000 adults who serve in various capacities as leaders. With the fine cooperation being extended by the national organization of BSA, we, the geological and geophysical professions, have an unparalleled opportunity to tell people about our area of science.

The American Petroleum Institute's Oil Information Office provided funds for the layout, printing and distribution of the Boy Scout Geology Kit which went to all of the 68,000 troop and unit leaders. The contacts of the kit were prepared through the joint efforts of the BSA, AAPG and AGI cooperating with the API. The kit is well done and is a credit to all involved! The AGI has distributed them to all geologists who have volunteered to serve a council, all state geological surveys, all college departments of geology-geophysics, and all local societies of the SEGp and of the AAPG.

At the national level, ground work has been laid for a highly successful Geology Month in Scouting, but the ultimate success will depend upon the follow-through at the local level. This is really a "grass roots" activity. Out of the 538 Scout Councils in the United States, about 200 are covered by geologists who have volunteered as individuals and groups. Some areas have good coverage while others have no geologist volunteers to date. Regrettably enough, this condition exists in some areas having large concentrations of geologists and geophysicists and active local societies. This reflects sadly on the esprit de corps and the public spiritedness of our professions.

In other areas the response has been heart-warming and the plans for October are ambitious. One major oil company is alerting its 200 geologists and geophysicists to the program. Some local societies are planning outstanding programs of activities and certain state surveys are assuming responsibilities of leadership.

Have you been interested enough to learn the needs of your particular area?

Are you contributing anything to GEOLOGY MONTH IN SCOUTING—*The Greatest Show on EARTH?*

OUR COVER

At Philmont Scout Ranch near Cimarron, New Mexico a group of Boy Scouts head toward the Tooth of Time. *From painting by Norman Rockwell provided by BSA.*

The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Sciences-National Research Council. It is the instrument of the profession serving and advancing the welfare of the geoscientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public education and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

GEOTIMES is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.

G.e.p.t.b.g. to B.S.A.*

***Geologists everywhere plan to bring geology to Boy Scouts of America**

FUTURE GEOLOGISTS? Stephen S. Winters, of Florida State University, explains the differences between the mammoth tooth he holds and those of the mastodon jaw bone on the table to Scouts Billy Slade, Walton Jay, and Jerome Novey. Looking on is John D. Bates, Coastal Petroleum Company geologist who is Chairman of the Boy Scout Committee of the Southeastern Geological Society.

Educational TV in Tulsa features Geology in Scouting with aid of the Tulsa Geological Society. Pictured from left to right are Mrs. Kathyrine Jones, Tulsa science teacher, and Scouts Steve Heaston and Ronnie Williamson.

way down South

The Boy Scout Committee of the Southeastern Geological Society, Tallahassee, Florida, is conducting an active program directed toward Geology Month in Scouting. The committee chairman is John D. Bates of Coastal Petroleum Company. The area covered is the Suwannee River Council, Region 6, and the Pensacola Council, Region 5. The latter is being spearheaded by Subcommittee Chairman Jack F. Schindler of the California Company.

At the Suwannee River Council summer camp, a geology exhibit was prepared by the Geology Department of Florida State University. Stephen S. Winters headed this project.

A course leading to the Geology Merit Badge will be conducted by B. F. Buie, Chairman of the Geology Department at Florida State, during October. About 50 Scouts are expected to enroll. Field trips will be included to local points of geological interest.

An exhibit of local geological materials in uptown Tallahassee is planned to stimulate community interest in the scouts' geological activity. This exhibit will be handled by William Yon, Jr., and Andrew R. Jansen of the Florida Geological Survey.

Unit contests in the Districts on the preparation of rock, mineral, and fossil displays will be sponsored. The society will judge the displays and present prizes to the winners in the Districts participating. Wendell L. Roberts of Coastal Petroleum Company is in charge of the judging.

Members of the Society will visit units requesting talks on geology and show films of interest to the program. The units will be assisted in using the geology kits and in participating in the national trading post.

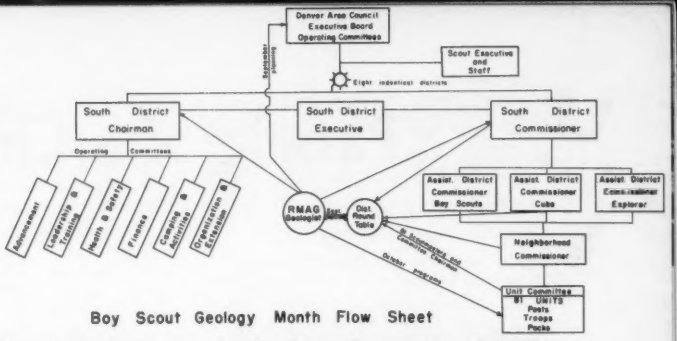
Leading up to the program, 800 letters were sent in August by the Council Office to leaders of the 167 scout and explorer units to inform them of the services offered by the Society. This was followed by the presentation of the program to the Commissioner's Staff, the District Committee, and by specially prepared invitations to the September roundtable. The Society conducted the roundtable program, demonstrated use of the kit, local topographic maps, a collection of 18 Florida rocks and minerals available to units for $1.00 from the Florida Geological Survey at Tallahassee, and further informed the assembled scouters of the program for October.

In Pensacola, a similar program is in progress to provide assistance to all units so requesting. In addition, a geological exhibit is planned with other Scout exhibits at the Escambia County Fair in October.

The Society regrets that space does not permit mention of all the geologists who are participating in the program. *Should any geologist in our area, or nearby, not active in the Society's program desire to assist, he is invited to contact the Chairman at Coastal Petroleum Company, 205 Petroleum Building, Tallahassee, Florida.* IT IS NOT TOO LATE!

out Tulsa way

Every Tuesday from 5:30 to 6 p.m. Station KOTV in Tulsa, Okla., carries a program *"Science is Fun"* presented by Mrs. Katherine Jones, science teacher in the Tulsa schools. Mrs. Jones attended the six-weeks school on Geology, sponsored by the Tulsa Geological Society, and has since



Boy Scout Geology Month Flow Sheet

This flow sheet by the R. M. A. G. should aid all geologists in understanding the channels for cooperation with Scout Executives in the Geology Month Program.

devoted considerable TV time to Geology. On June 4 and 11 the entire programs were about rocks, minerals, fossils, and historical Geology. Using two Scouts, the program strongly emphasized the Boy Scout merit badge on Geology and the October Month of Geology for Scouts. Also featured was a map offered listeners, showing where fossils could be collected from outcrops in the vicinity of Tulsa. They were unprepared for the tremendous response. The Society has been requested to repeat its course again this winter.

in the mile-high country

WHERE DO YOU FIT? Does your Geology Month function mesh with the Boy Scout program? The flow sheet of the Boy Scout organization, shown above, depicts the position and function of the Rocky Mountain Association of Geologists as worked out with Scout executives of the Denver Area Council.

A similar organizational chart for the Scouting movement exists in your area! In order to implement your participation in the Geology Month project and to achieve the highest degree of liaison between you or your professional group and the proper authorities in Scouting, contact your local Scout office. Show them this diagram and where your services can fit into their chain of command and advanced planning schedule.

The Rocky Mountain Association of Geologists may be called upon to supply 250 geologic counsellors for the planning of October schedules and field trips. In order to handle a participation of this magnitude, the RMAG Education Committee under the direction of Dan Turner, Geological Consultant, has by direct mail solicitation of members, in cooperation of the Denver Area Boy Scout Council, listed the names of all volunteers by residential localities within the metropolitan area of Denver. Each geologist will meet with the council and Scouting units in his home area, arranged by direct contact with the BSA district representatives. He will attend a Council meeting for a planning session in September.

Another September meeting of the District Round Table will provide Scout leaders with introductory movies stressing the position of geology in the economy of natural resources, and the part which can be played by these leaders in bringing the subject before the boys. Each geologic counsellor will meet with the boys at least once during October to conduct meetings or field trips. Your cooperation is needed in your area and may be worked out along similar plans.

in old New York

Explorer Scouts and Boy Scouts of the Old New York District visited the Warwick Mine of the Ramapo Uranium Company in northern New Jersey. Led by Arnold Buzzalini, consulting geologist with the General Nucleonics Corp. of New York, a bus load of scouts observed "Geology Month" early this summer as a final spring field trip after three evening Geology and Exploration Sessions held during the spring months.

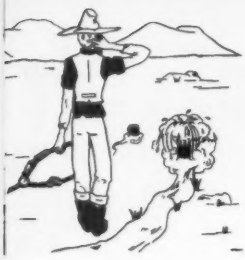
All of the boys were able to enter the mine fully equipped with hard hats, geology picks and Geiger counters to collect their own samples of pitchblende and magnetite. The tour included several stops to study the evidences and effects of glaciation in northern New Jersey. An hour lecture on "what is a mining geologist and what does he do" was also included during the day-long trip.

Plans are now being made for several mine trips during the October Geology Month for the 47 scout units of the Old New York District. The evening lecture and film program which were initiated this past spring on study of the various careers in petroleum geology, exploration geophysics, atomic energy, and mining, will also be continued.

in the tall corn country

The Greatest Show on "KANSAS EARTH" for Kansas Boy Scouts in October 1957 will be supported by many side shows featuring many phases of geology. The climax of

Continued on page 17



Passing of a Champion

Water-witchers lose strong proponent with passing of Kenneth Roberts

With the recent death of the well-known American writer from Kennebunkport, Maine, Kenneth Roberts, the fine art of waterwitching lost a most ardent champion. It was natural that geologists, as men of the out-of-doors, took enthusiastically to his most outstanding book, the well-known best seller, *"Northwest Passage."* It is just as natural that the professional geologist bridled at much of his more recent writing which extolled the virtues of waterwitching and the prowess of his protege, the now-famous Maine water dowser, Henry Gross. Roberts became so enamored with the fine art of divining that he dashed off a book about his favorite subject, *"Henry Gross and His Dowsing Rod,"* followed by its sequel, *"The Seventh Sense."* It is reported that at the time of his death he had finished reading proof on another book, *"Water Unlimited."*

Waterwitching would appear to be almost as old as man. In 1556 Georgius Agricola described the use of the divining rod in *"De re metallica."* The bough of peach and apple trees, the slippery elm, automobile pliers, and little black boxes are variously preferred by dowsers who seek not only water, but various ores and minerals. One Pennsylvania Dutch farmer guards closely the secret of his little black box, the occult powers of which permit him to locate water, oil minerals . . . *"even the bones of the dead."*

According to the preliminary findings of a recent survey, there are about 25,000 diviners (*not to be confused with geologists and geophysicists*) in the United States. The survey shows the typical waterwitcher to be a male, over 65 years in age, most commonly a farmer in a sparsely settled rural area, and one who believes that only a few people possess his gift and that it is an inborn power. Discounting for the moment the fact that ground water occurs rather widely distributed in the rocks under large areas of the land's surface, we might also add that every successful water well located by divining is recorded as supporting evidence for the mystic art. The more proficient dowsers even call the depth at which water will be found and the size of the "flow." Their underground water nearly always flows in "streams" or "veins." The dowsers' dry holes are passed off as quietly as those of the oil stock promoter who still has a few thousand shares to sell. In contrast with the professional ground water geologist, there is an ever-present confidence among dowsers that they can find adequate water to meet the occasion.

Much as a fight manager looks after his "boy," Kenneth Roberts took Henry Gross under his wing. He provided opportunities, publicized the successes and rationalized the failures. Contributing to Henry Gross's claim to fame was his Roberts-managed and -publicized remote control divining for water in Bermuda achieved by dowsing over a map in Maine. Baited by an Albany, New York newspaper reporter in 1952, the Gross-Roberts team pulled two much-publicized "rocks" on the Robert J. Pauley farm near Albany. These dry holes and the attending publicity cut Roberts to the quick.

As recently as 1957, sponsors of a Central American archeological expedition for one of our prominent university museums sought aid through Roberts for a solution to their camp water supply problem. Map-dowsing in Maine, Henry Gross pin-pointed a site and predicted a depth, but alas, the hole was dry. Not to be denied, Roberts shipped Gross off to the location for another try—again to meet with frustrating failure. At latest report, a third well was drilling—this on the location selected by two petroleum geologists—of all people! These two chaps, the report goes, will not predict that water will definitely be found and will not hazard a statement as to depth. Herein we may observe a difference between Gross and the typical geologist.

And so it goes . . . in this conflict, the factual, scientific approach to the finding

INFINITY OVERSEAS

The initial issue of *Infinity*, the quarterly bulletin of the newly organized American Overseas Science Association, appeared in July 1957. The Association is an unofficial and amateur organization composed of U.S. Air Force personnel located at R.A.F. station, West Drayton, Middlesex, England. The purpose of the Association is to stimulate off-duty interest in the sciences and the general meetings are planned to range over all of the sciences and mathematics. The theme for July was geology and for August the International Geophysical Year.

A/2c Thomas A. Russell, who is secretary of the new A.O.S.A. and one of the driving forces in its organization, is interested in geology. Through his efforts GEO-TIMES is now being sent regularly to the base library. The A.O.S.A. is planning to participate in the World's Fair, Brussels, Belgium, Spring 1958.

The A.O.S.A. welcomes visitors and is interested in guest speakers, so that U.S. scientists planning trips to England should write Secretary Tom Russell at the above address.

NSF RESEARCH GRANTS

Earth Sciences Program of the National Science Foundation is now receiving proposals for research grants that will be made in February and March 1958. Deadline for the receipt of proposals for work to begin in the fall or early winter is September 20, 1957. There are no formal application blanks but a Foundation pamphlet describes the method of making application and outlines information needed in a proposal. This pamphlet may be obtained by writing directly to THE NATIONAL SCIENCE FOUNDATION, *Attention: Earth Sciences Program, Washington 25, D. C.*

of water continues to be squared off against the mystery-shrouded, age-old method of the dowser. The dowsers will miss their champion, Kenneth Roberts, but the Henry Gross's and the Steve Reiss's will continue to practice the art and mystify their followers.

One concluding point of interest—there are an estimated 25,000 dowsers in the U. S.; there are also about 25,000 geologists and geophysicists. Weighing numbers, the battle should be a stand-off. . . . May the best water finders win and may there be ample water for all. The loser of each individual skirmish undoubtedly will have a nice dry hole to crawl into.

MANPOWER *in a column —*

By HOWARD A. MEYERHOFF
Scientific Manpower Commission

The supply-demand situation in engineering and science is being followed with as keen interest in some quarters as club standings in the National League. The trouble with manpower is that it can't be reduced to statistics that would enable geologists to boast that the Rockhounds lead the League by four games or to lament that they had dropped into the second division. Current statistics on earth science graduates, soon to be published in GEO-TIMES, are bound to raise questions.

Once again the figures are up, and at a time when domestic demand for oil men is down. Someone is soon to ask whether there is an oversupply—whether we should apply the brakes on recruitment. Someone may even suggest that we go slow on the Geology Month in Scouting, which is designed to interest a large group of live boys in geology.

The question has no application to the Boy Scout project or to any other effort to acquaint youngsters under 80 with geologic phenomena and earth history. A knowledge of the earth and an appreciation of its resources should be part of everyone's general background. The lack of such knowledge limits the demand for geological services—and for geologists.

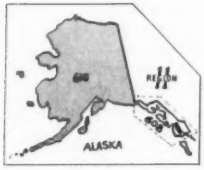
The vacillating federal attitudes—inadvertently we almost dignified it by calling it a policy—on mineral raw materials, on imports vs. domestic production, on support for potatoes but not for tungsten, reflect public ignorance for which the profession must assume some responsibility. The scarcity of geological consultants on any phase of the nationwide road program reveals the failure of the profession to sell itself, not as a career for the youth of the nation but as an indispensable adjunct to, and an inseparable part of, the national economy.

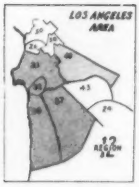
Scientists as a whole have not won any medals or earned any citations for outstanding public relations. Geology Month in Scouting offers the earth scientists a prime opportunity to lead the League in public relations. The opportunity will be missed unless personal responsibility is assumed to see that geology gets across at the local troop level next month. If the profession gains a few able and discerning recruits as a by-product, the effort will pay double.

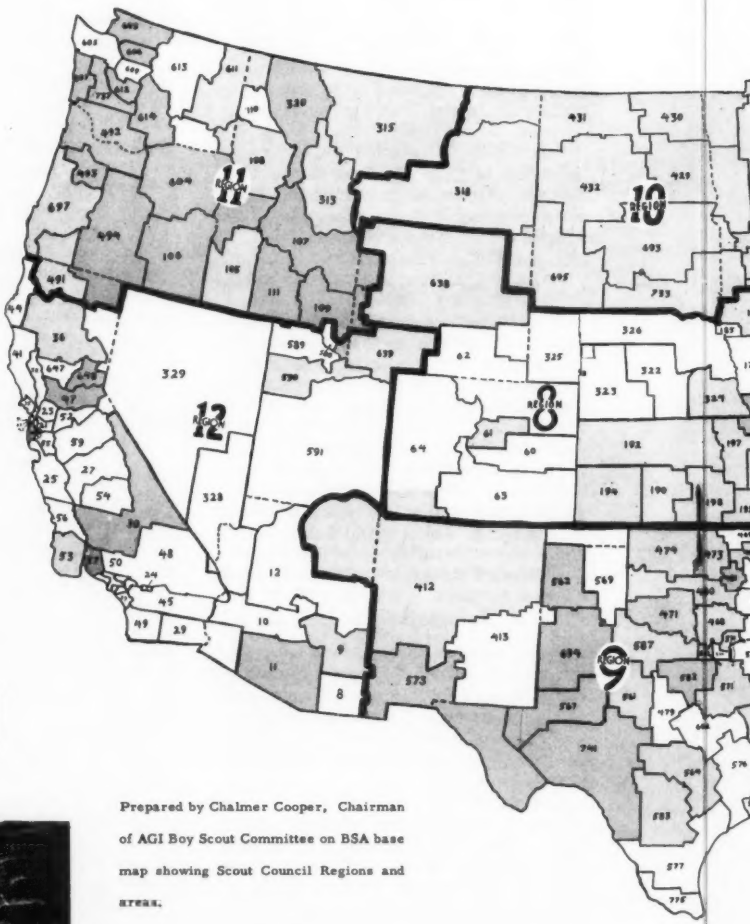
Geologist Douglas Ball, of Ball Associates, Washington and Denver, and engineers for the Washington Gas Light Co., gave advice to the members of Troop 444, Cabin John, Maryland, on the preparation of their model of an underground gas storage pool which was exhibited by the troop at a Washington Area Council Scout Circus. The project was featured in the Washington Gas Light Company's magazine, "Wonder Flame."

Scouts are introduced to a king-size fossil from a phosphate quarry on the Ft. Hall Indian Reservation near Idaho Falls, Idaho.

Explorer Scouts learn to use counters in prospecting for uranium on visit to New Jersey mine.







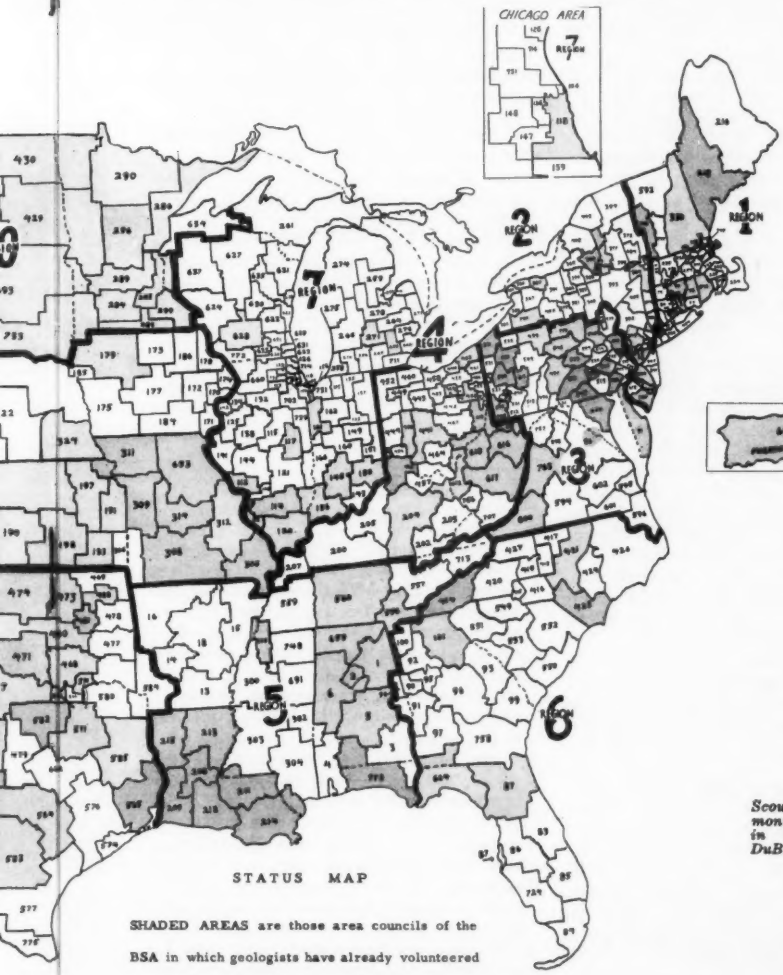
Prepared by Chalmer Cooper, Chairman of AGI Boy Scout Committee on BSA base map showing Scout Council Regions and areas.

Boy Scouts observe world's deepest open pit copper mine, Bingham Canyon, Utah.

The Round-Up

ACT TODAY
Contact your local Scout Council Executive
Volunteer aid of geologists-geophysicists everywhere
is needed Now to make
GEOLOGY MONTH
THE GREATEST SHOW ON EARTH

Eagle Scout Bryan Lewis of Denver gets an introduction to geology in Red Rocks Park from R. M. A. G. member N. S. Cook, Jr., Denver consultant. Photo by Vernon Jones.



STATUS MAP

SHADED AREAS are those area councils of the BSA in which geologists have already volunteered cooperation and assistance in planning geology activities during GEOLOGY MONTH IN SCOUTING OCTOBER 1957.

Scout Caravan enroute to Philmont stops to collect fossil leaves in Wind River Valley near DuBois, Wyoming.

Jurassic and Cretaceous formations along the Wind River, northwest of Lander, Wyoming are examined by Scouts.

The July column on the absence of geology from the *Saturday Review* can hardly be said to have provoked a flood of replies, but a couple of letters are eminently worth consideration. Both authors are receiving what will probably not become widely known as the G.B.A. (*Golf Ball Award*).

H.H.S. makes the point that in the public prints science means technology, and that only the technologic consequence of a scientific discovery is of interest. This is discouraging but true. The idea that the principles of physics might be applied to the earth was of no news value whatever, but a technique like seismic shooting makes the papers because it involves action—specifically, a dynamite explosion. The gadgetry of science, in short, is easier to communicate than the ideas that gave rise to it.

A bigger point, however, is made by both H.H.S. and Louis Christian. They point out that in the middle of the last century geology was in the eye of the educated public because it stood at the center of a philosophical controversy—on the true nature of fossils, the theory of evolution, the descent of man. These matters, of course, have long since ceased to concern the public, and today public interest is understandably centered on matters of present controversy, like what to do about radioactive fallout. Christian cites George G. Simpson as one who has presented culturally significant aspects of modern geology to the intelligent public, but he admits that no more than a handful of men in our science are capable of doing that. "We shall get resurrected," remarks H.H.S., "if and when the philosophic content of geology happens to impinge again upon one of the ultimate questions of mankind."

But do we have to wait for that? The Colorado oil shale made the *Reader's Digest* recently. Why wouldn't a story about radiocarbon and lead-helium rock dating be *Saturday Review*-worthy? How about a story based on those turbidity currents that snapped the cables on the floor of the North Atlantic? Name your own subject. The conspiracy to keep geology out of the news seems to be among geologists rather than among science editors.

If you have a story on Geology in the Public Eye, write: Dr. Bates, Dept. of Geology, Ohio State Univ., Columbus, O.

PHILMONT SCOUT RANCH

A brief comment on Philmont Scout Ranch should be of interest to readers of GeoTimes. Oklahoma oil man, Waite Phillips, acquired a sizeable ranch near Cimarron, New Mexico and developed it into a show place ranch that included a magnificent Italian style ranch house, swimming pool, etc. In 1938 Phillips gave the 35,000 acre ranch to the Boy Scouts of America. In 1941 he gave them additional land, which brought the total acreage to 127,000 acres and included a cattle raising operation. The expanded ranch then became known as Philmont Scout Ranch and, to provide funds to maintain and operate it, he also gave them the Philtower Building in Tulsa. Philmont Ranch is managed by a special division of the BSA known as Philmont Properties.

Advanced scouts from all over the country visit Philmont Scout Ranch each summer. Although no published reports on the geology are available, there is usually a volunteer geologist available to fill the scouts in on the geology of the area. There are some coal deposits on the ranch property and several abandoned gold mines. The visiting scouts can usually raise a show of color when trying their hand at gold panning in the mountain streams. Dominating the scenery of the ranch is the Tooth of Time, the ridge pictured by artist Norman Rockwell on the GeoTimes cover. The Tooth of Time is formed by a monzonite dike.

O. U. CONFERENCE

NORMAN, OKLA.
SEPT. 23-24

A two-day conference on Fluid Flow Through Porous Media will bring together a number of outstanding research workers on the campus of the University of Oklahoma, under sponsorship of the School of Petroleum Engineering. A nucleus of prepared papers is anticipated to stimulate active discussion of this subject so vital to the petroleum industry.

Dr. P. C. Carman of Pretoria, South Africa, will be the guest of honor and featured speaker. He is Chief Research Officer of the National Chemical Research Laboratory, South African Council for Scientific and Industrial Research. Dr. Carman is best known for his modifications of the Kozeny equation and his recent book, *Flow of Gases Through Porous Media.*

Further information may be obtained by writing the Conference Chairman, Professor Charles G. Dodd, *University of Oklahoma, Norman, Oklahoma.*

"Do a Good Turn for the Boy Scouts During Their October Geology Month"

urges API's Oil Information Committee

Forty thousand volunteer members of the Oil Information Committee, public relations arm of the American Petroleum Institute, plan to show appreciation in October for all those "Good Turns" that Boy Scouts have been doing these many years. They are cooperating with the American Geological Institute, the American Association of Petroleum Geologists, and the Boy Scouts of America, in making Geology Month in Scouting a rousing success.

The geologists of the country will carry the heaviest burden in teaching Scouts and Explorers the rudiments of their science next October. In many sections of the country, however, there are not sufficient numbers of geologists to participate in all the meetings, field trips, and other activities that Scout Troops and Explorer Units have planned for the month. It is in such places that working oil men from all segments of the industry will step in as pinch hitters to make talks, show films, and do whatever else they can to help out. Committees of the OIC—located in just about every community of more than 3,000 population in the United States—are offering their services for the occasion to local Scout executives in whatever capacity they may be needed.

In the nature of their business, most oil men have acquired some knowledge of the subject under study. And, since they will be observing Oil Progress Week from October 13th to 19th, they will be able to invite Scouts to many special events that tie-in closely with Geology Month. In many communities, for example, plans have been made to take groups of Scouts and Explorers on tours of oil installations, and to have Geology Merit Badge winners as speakers at civic luncheons and dinners.

API-OIC activities on behalf of the project have not been, and will not be, confined to field work in October. As early as last Fall, the API began cooperating with the AGI, AAPG, and BSA on preparation of the comprehensive kit to be used as a handbook for Geology Month. The API financed publication of 75,000 copies of this kit—one for each Troop and Unit in the nation.

It printed two million copies of a leaflet entitled "Careers in Petroleum Geology." These have been inserted in each kit in sufficient quantity so that every Scout and Explorer may have one.

In addition, API prepared and distributed another leaflet, called "Do a 'Good Turn'", which shows OIC members how they best may cooperate with the project at local levels. And it provided these Committeemen with an exciting speech on geology, complete with informative "gadgets" that will delight the heart of any boy.

To arouse enthusiasm for Geology Month, not only among its own members, but among the nation's 1,600,000 oil men, as well as educators and the general public, API-OIC is releasing stories to the press at regular intervals, and is carrying articles in its various publications. Among the latter are:

A feature in the next issue of *API Quarterly* which includes a statement by Chief Scout Executive Schuck.

A suggestion that OIC members appeal to principals and teachers in more than 13,000 secondary schools that use API educational materials to offer their services to local Scout executives. Similar suggestions to oil company employees, women's clubs, PTA groups, and other organizations with which API has contacts.

Efforts also are being made to get Geology Month mention—or more—on network television and radio programs, and to interest a newsreel in covering some field trip or other project activity.

All in all, the entire petroleum industry, and many other segments of the population, are being rallied behind the month in an endeavor to make it the most successful event of its kind in Boy Scout history.

GEOLOGY

GEOLOGY MERIT BADGE REQUISITES

1. DO ONE:
   (a) Make a collection of different ores, rock-forming minerals, and fossils and label with name and use (or age) of each specimen. (Minimum total, 20 specimens.)
   (b) Make a collection of different sedimentary, igneous and metamorphic rocks and name the important minerals found in each. Tell what use can be made of these rocks. (Minimum total, 10 specimens.)
2. DO ONE:
   (a) Visit a mine, quarry, oil or gas field; a gravel, clay, sand or shell pit; or other similar operation. Explain the nature of the deposit and how the product is removed, transported, sold, and used. What safety precautions are used in this operation.
   (b) Visit your local water-supply system and describe the source, quality, and amount of water required for your community and its relation to the geology of your area.
3. FIND OUT if there is a topographic map of your home area and how it is obtained. Study the map, explaining the important geological features shown on it. (If a local map is not available, study one of another area that is familiar to you. Air photos may be used instead of a topographic map.)
4. DO ONE:
   (a) Prepare a report, including maps or sketches, on the geological features on or below the surface of the region where you live, your Scout camp, or an area that you know.
   (b) Describe how the soil of your area was formed and the kinds of rock from which it came.
   (c) Describe the earth minerals used in your home (or a public building) and tell how they were obtained; or list those which you use every day and give their source.

ALTERNATIVE: In place of 4a, 4b, or 4c, the merit badge counselor may choose a project of like merit that will make use of some of the interesting geological features of the area in which you live.

The Merit Badge Pamphlet in Geology was placed in official use January 1, 1953. Back of this lay eight years of labor by a committee of the AAPG, which was formed in 1945 because of the interest in scouting of Geologists A. C. Bace and George W. Pirtle. A preliminary edition was prepared in 1950 by the committee then headed by the late Max W. Ball, with the assistance of the U.S. Geological Survey. These unofficial copies were tested at various places throughout the country, especially at Philmont Scout Ranch in New Mexico.

Revisions were made subsequent to the testing and the manuscript Merit Badge Pamphlet was turned over to the BSA. However, much "midnight oil" was yet to be burned over the Geology Merit Badge requirements which went through innumerable drafts before they were considered appropriate for scouts the country over. Despite this careful work it has been found necessary to revise the requirements. These revised requirements were approved and put into the November 1956 edition of the Merit Badge Pamphlet. This new edition also carries two pages of new copy on "Water Supplies," prepared by the U.S. Geological Survey.

The responsibilities of the AAPG committee did not end with the publication of the 1953 version of the pamphlet, for an enlarged committee, under the chairmanship of Frank Gouin, has been acting subsequently in promoting the wider interest in the Geology Merit Badge over the country and in encouraging geologists to become counselors for scouts trying to earn the badge.

A large number of copies of the pamphlet are being used outside of scouting. Many schools have found it useful in presenting geology as a unit in beginning science courses. Many oil companies and other organizations have used it to tell their employees not trained in geology something about this science, which is becoming so fascinating to an increasing number of people.

The number of Geology Merit Badges awarded has risen steadily since the new pamphlet appeared. The program suggested for Geology Month (October) will give scouts all over the country an introduction to our science, and also will give them an excellent opportunity to meet the requirements for the badge during this month's activity. All geologists working with the program will find the Geology Merit Badge Pamphlet an important item for their kit of program material for October.

DEAR SIR:

An appeal to senior geologists from the head of a small, postwar geology department! Where shall your life-time collection of geology maps and books do the most good? Have you provided for this in your will? Have you willed them to your alma mater? Isn't it possible that this will result in making "the rich richer and the poor poorer" as far as old vs. young departments are concerned?

Demand for geologists is growing. Many new departments (since World War II) have arisen. Others have expanded. But classical references, foreign and domestic, published before the war are out of print, particularly such as U.S.G.S. monographs and folios. Many others, still available, are financially out of reach.

If wisely distributed, the private professional libraries of geologists over fifty years of age could greatly aid geologic education. The A.G.I. might well carry the date of the first geology graduate beside each department named in the Directory (*Report No. 11*), or in some more direct way act as a clearing house of data on needy and worthy departments, and indeed, those which may yet be organized in future years. It is likely that a large percentage of senior geologists with the Ph.D. come from the seventeen "favored universities" of Croneis (*"Problems of Geological Education and of Educating Geologists," A.A.P.G. Bulletin, Vol. 40, p. 2968 1956*)). It is almost certain, too, that these same seventeen schools have superb geology libraries, in fact, may have a serious duplicate disposal problem.

Is some sort of profession-wide planning not in order, for the education of future geologists? I hope the A.G.I. and all our senior colleagues will give serious consideration to the question with which this appeal opens.

Sincerely,

JOHN B. LUCKE
Univ. of Conn.

DEAR EDITOR:

Here is my very modest contribution. I am enjoying our monthly GEOTIMES and I read and re-read the articles and fine opinions with interest. Many items are of great personal use.

Thank you very much, and my best wishes for deserved success to you and your staff.

Most cordially,

PROF. DR. W. RUEGG
Universidad Nacional de Ingenieria
Lima, Peru

DEAR EDITOR:

This letter is to tell you how much I enjoyed receiving GEOTIMES since I left the U. S. in the fall of 1956 after a one-year stay. Your publication has been each month quite a thrill bringing to Switzerland so many happy recollections of institutions, individuals, and . . . rock chips that we learned to appreciate during our stay.

We are coming back this fall permanently to the United States and will be at the University of Illinois.

Yours very truly,

ALBERT CAROZZI
Asst. Prof. of Geology
University of Geneva

DEAR EDITOR:

One big reason for the lack of general interest in Geology has been the difference in the type and character of writing professional reports. In the days of Powell and Hayden the Survey reports were written in an interesting manner with a minimum of technical jargon and nearly every farmer and merchant in those days had copies of the Annual Reports and were proud to own them, and what's more, they read them.

Since about 1900 the U. S. Geological Survey and most of the State Surveys have frozen their style and adapted a set of rules that makes the reading of geological reports, by anyone except a professional, a task as hard as cube root and equally dry and unrewarding. . . .

. . . Besides bringing Earth Science to the young folks let's insist that our State and Federal Surveys prepare some reports for the public, in plain English, instead of the kind that are read only by geologists. Many are so technical they can be appreciated only by a specialist in the same field.

Let's all get going on this matter. In less than a decade there will be widespread understanding, many more students graduating and many more jobs to fill.

Sincerely yours,

C. MAX BAUER
Winter Park, Florida

Popular Geology in Print

by Mark W. Faughon Jr.

Books should be ordered by title and publisher from your local book dealer.

For the layman, there can be no better introduction to the earth sciences than to take him along into the field, if only through the pages of a good book.

Now that John Wesley Powell's famous EXPLORATION OF THE COLORADO RIVER (U. of Chicago Press, 1957, $4) is available again, we can all sweep down the Canyon with the indomitable Professor. In HUNZA, LOST KINGDOM IN THE HIMALAYAS (Funk & Wagnalls, 1956, $5), geologist *John D. Clark* gives a delightful account of how he ran a Point-4 program and searched for minerals in a tiny Asiatic principality.

One of our greatest scientific explorers is the subject of several fine volumes. John Charles Fremont's NARRATIVES OF EXPLORATION AND ADVENTURE (Longmans, 1956, $8.50) vividly describes his first three expeditions; *William Brandon's* THE MEN AND THE MOUNTAIN (Morrow, 1955, $5) deals with the disastrous fourth expedition; INCIDENTS OF TRAVEL AND ADVENTURE IN THE FAR WEST, by *Solomon Nunes Carvalho* (Jewish Publication Society of America, 1954, $4.50) is a reprint of an 1857 book by the official photographer of the fifth expedition. *Allan Nevin's* FREMONT, PATH MARKER OF THE WEST (Longmans, 1955, $7.50) is the standard biography, and emphasizes this remarkable man's explorations. JOHN CHARLES FREMONT, TRAIL MARKER OF THE OLD WEST, by *Olive Burt* (Messner, 1955, $2.95), is just the thing for youngsters 11 to 15.

The topographic exploration of the Southwest is the intriguing subject of *Edward Seccomb Wallace's* sketchy THE GREAT RECONNAISSANCE; SOLDIERS, ARTISTS, AND SCIENTISTS ON THE FRONTIER, 1848-1861 (Little, Brown, 1955, $5). BEYOND THE CROSS TIMBERS, by *W. Eugene Hollon* (U. of Oklahoma Press, 1955, $4) deals with the life of Randolph B. Marcy, and stresses his mapping of the Southwestern Plains. THE JOURNAL OF CAPTAIN JOHN R. BELL (Arthur H. Clark Co., 1957, $9.50) is the story of the 1820 expedition of Stephen H. Long to the Rockies. *Frederick W. Bachman,* in THE LAND BETWEEN (Westernlore Press, 1957, $6), has provided us with a fine bit of Americana in his translation of surgeon-geologist James Schiel's account of the ill-fated Gunnison expedition across the Rockies in 1854.

ELEMENTS OF GEOGRAPHY, *4th Edition, by V. C. Finch, G. T. Trewartha, A. H. Robinson, and E. W. Hammond, 693 pp., 1957, McGraw-Hill Book Co., Inc., 330 West 42nd St., New York 36, N. Y., $7.50.*

The well recognized college textbook has been revised and modernized to incorporate the most modern concepts of geographic knowledge. This book should be a welcome addition to the well rounded geological library inasmuch as it stresses quite strongly the importance of geologic factors in geographic interpretations. It could well serve as a supplementary text in physical geology.

LABORATORY MANUAL OF CRYSTALLOGRAPHY FOR STUDENTS OF MINERALOGY AND GEOLOGY, *by George Tunell and Joseph Murdoch, 55 pp., 1957, Wm. C. Brown Co., Dubuque, Iowa, $2.75.*

A laboratory manual designed for use in the teaching of elementary crystallography.

EARTH FLEXURES, *Their Geometry and Their Representation and Analysis in Geological Section with Special Reference to the Problem of Oil Finding, by H. G. Busk, 106 pp., 1957, William Trussell, Box 13, Cathedral Station, New York 25, N. Y., $3.95.*

The purpose of this book is to stimulate a more exact interpretation of data compiled on geologic maps through the utilization of geometric methods in compilation of geologic sections. The geometric relations encountered in geological sections and the axial plane are discussed in detail. Geological mapping methods leading to greater accuracy in the drawing of geologic sections are outlined.

CHEMISTRY IN INTRODUCTORY GEOLOGY, *by W. D. Keller, 84 pp., 1957, Lucas Brothers Publishers, Columbia, Missouri.*

A handy little manual which describes in simple language, with a number of illustrations, the basic chemistry to aid the beginning student in geology who has had no previous course in chemistry.

KANSAS SCOUTS *Continued from page 7*

activities in most Councils, as indicated in program outlines submitted by contact geologists, will be field trips to study rock formations, to collect fossils and minerals, and to observe mineral industries. Consulting geologists and geologists of the U.S. and State Geological Surveys, the State Highway Department, the State Board of Health, the Kansas Geological Society, and geology departments of colleges and universities, as well as many others including members of rock and mineral clubs, will participate in the program.

The *Coronado Council*, composed of 32 counties in north-central and northwestern Kansas and geographically the largest of the Kansas Boy Scout Councils, will be treated as three sections. In the westernmost section, where recently there has been considerable road building and dam construction, stress will be on engineering geology; in the central part, which is oil-producing territory, emphasis will be on petroleum geology; in the easternmost section, concentration will be on geologic field trips and fossil-hunting tours.

One of the attractions in the *Jayhawk Council* will be a competitive rock and mineral show in Topeka. Prizes will be awarded scouts having best displays at this show, sponsored in part by the Topeka Gem and Mineral Society.

In the *Kanza and Quivira Councils*, in south-central Kansas, Wichita geologists will visit meetings from September 1 to September 10 to discuss program plans for October. The Kansas Geological Society film strip on geology as a vocation will be shown to explorer groups and displays of rocks, minerals, and gems are planned for Boy Scouts. All units supplied with geology kits will be offered several options relating to geology for troop or unit meetings, and an attempt will be made to comply with requests, either from the Kansas Geological Society or the Wichita Gem and Mineral Society. Also, a two-council field trip is scheduled for October 5.

A major geologic field trip scheduled for October 19 in *Kaw Council*, eastern Kansas, was preceded by short field trips and instruction in geology at the Council camp sessions during the summer. A guidebook on the geology and mineral resources of Kaw Council, prepared by the State Geological Survey of Kansas in 1956, is a basic source of program material.

The theme of the October program in the *Santa Fe Trail Council*, southwestern Kansas, will be ground water and oil and gas, important mineral resources in this area. Field trips that will include stops at oil and gas fields and at an exploration and production office of an oil company are planned. Also there will be one or more trips to examine specific rock formations.

Geologic field trips on the 12th and 26th of October have been scheduled in the *Se-Kan Council* in southeastern Kansas. Lessons in geology were incorporated in Council activities this summer.

Geologists from Missouri and Kansas will coordinate activities in the *Mo-Kan Council*, which is partly in Missouri and partly in Kansas and includes part of the Tri-State Lead and Zinc Mining District. In July classes in geology were conducted by geologists of the Kansas and Missouri Geological Surveys and the Scouts visited a lead-zinc mine where they did some collecting. Information currently is being assembled for a guidebook on the geology of the Council area.

AGI SLATE ANNOUNCED

Dr. Meredith Johnson, Chairman of the Nominating Committee of the American Geological Institute, has reported the following slate of officers:

for President: J. V. HOWELL
for Vice President: PAUL L. LYONS
for Sec.-Treas.: DONALD H. DOW

Under provisions of the by-laws, the Nominating Committee is appointed by the President from the Board of Directors. This committee is required to report to the Executive Committee one month before the regular fall meeting so that a ballot may be transmitted to the Directors at least two weeks before the regular fall meeting of the Board. Additional nominations may be made by the Directors at this meeting. The newly elected officers take office at the close of this meeting.

The Nominating Committee consists of *Dr. Meredith Johnson*, Chairman, Director representing the AASG, and *Dr. Robert L. Bates*, Director representing the AGT.

DECENNIAL INDEX

The index to volumes 31-40, 1946-1955, of the AMERICAN MINERALOGIST is now available. Price, postpaid, to members and fellows, $3.00; to non-members and subscribers, $5.00. Orders, with remittance payable to the Mineralogical Society of America, should be sent c/o Earl Ingerson, U. S. Geological Survey, Washington 25, D. C.

VENING MEINESZ HONORED

At a meeting of the Geophysical Section of the Royal Netherlands Geological and Mining Society, held in Utrecht on May 18, the President of the Section, Mr. A. van Weelden, presented Professor F. A. Vening Meinesz with a volume of essays and papers prepared to commemorate his seventieth birthday.

This commemorative volume, which includes contributions from prominent geophysicists in the different countries, also contains a gravity map of the Netherlands on a scale of 1:500,000.

Mr. van Weelden set forth in detail Professor Vening Meinesz' many achievements, not only with regard to the Geophysical Section, of which he was one of the founders, but also in connection with his university work, his collaboration with the Rijks Commissie van Geodesie (State Committee for Geodesy) and the K.N.M.I. (Royal Netherlands Meteorological Institute), and, above all, within the framework of the International Union of Geodesy and Geophysics, of which he has been president.

Professor Vening Meinesz has been honored many, many times in many countries for his outstanding contributions to geophysics. Among the honors conferred upon him in the United States were the Penrose Medal of the GSA in 1945, the Bowie Medal of the AGU in 1947, and the Agassiz Medal of the National Academy of Sciences in 1948.

In addition to a large number of members of the Geophysical Section, there were many guests present at this ceremony. They included naval officers who accompanied Professor Vening Meinesz on one or more of his expeditions, Professor R. Roelofs, President of the State Committee for Geodesy, Mr. C. J. Warners of the K.N.M.I., Dr. H. M. S. Schurmann representing the Royal Netherlands Geological and Mining Society, and Professor G. J. Smit Sibinga, President of the Royal Netherlands Geographical Society.

The jubilee volume which commemorated Professor Vening Meinesz' 70th birthday not only contains an outstanding collection of papers on various aspects of geophysics but also contains warm words of tribute to him and his many accomplishments. *Information concerning the availability of this volume may be obtained by writing B. J. Hofman, Secretariat Geophysische Kring, Daal en Bergselaan 44, The Hague.*

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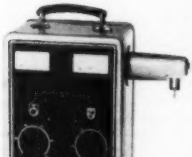

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BOX 311. Geologist, 25, M.S., single. Presently in U. S. Army. Available Oct. 1957. Desires research or exploration position. Fluent Spanish, passable French.

BOX 328. Geologist, desires research-teaching position in College or University. Ph.D., 39, married. Interest in sedimentation, general geology, administrative geology, petrology. Four years U.S.G.S. in stratigraphy, 5 years industrial experience.

BOX 330. ECONOMIC GEOLOGIST, GEOLOGICAL ENGINEER. 36, family, M.S., 8 years with large State Survey in West on metals and nonmetals, 2½ years as head of Gov. Survey in Latin America on regional geol., eng. geol. and utilization of mineral resources. Consulting experience. Some Spanish, publications, acad. and eng. societies, currently employed. Will consider foreign.

BOX 331. GEOLOGIST-EXECUTIVE, 49, Ph.D. Over 12 years exploration for major companies. Widely experienced in petroleum geology, sedimentation, mineralogy, ore deposits, and uranium geology. Seven years teaching in major university. Executive and administrative abilities—will organize geology department for expanding college. Top references.

BOX 332. GEOLOGIST, M.Sc., Ph.D. Ten years in petroleum; two years uranium exploration. Considerable geophysical experience. Five years teaching in college: petroleum geology, sedimentation, mineralogy, stratigraphy, etc. Desires professorship in college granting degree in geology or will consider position as chief geologist for aggressive, small, independent oil company providing interest privilege.

BOX 335. Geologist-geophysicist, 47, married, 13 years experience coordinating all phases oil exploration programs from off-shore Gulf to Canada and Nevada to Illinois. Wide acquaintance in industry. Desires job as geophysicist or exploration coordinator where some latitude in using geological experience can be used. Presently working independently mineral exploration Great Lakes Area. Best of references.

BOX 336. GEOLOGICAL ENGINEER, married, 32, 8 years experience in sub-surface exploration, development, and management in Texas and New Mexico. Presently employed by independent. Desire change, will relocate. Member AAPG.

BOX 337. GEOLOGIST, employed, 27, married, B.A., M.S., member GSA & AAPG, 18 months experience with major oil co., 7 months with U.S.G.S., experienced in subsurface exploration geology, surface geology, and aerial photographs. Desires overseas position with oil co. in exploration work.

BOX 339. Geophysicist-Geologist with ten years experience in oil business, at present doing graduate work in Chicago, available as consultant on field and interpretation problems in oil exploration work.

BOX 340. GEOLOGIST, 48, married, Ph.D., Fellow GSA. Several years teaching and museum experience. Broad field experience in America and Asia. Qualified for university or museum position in stratigraphy, vertebrate paleontology, advanced general geology. Excellent references. Available immediately.

BOX 341. Geologist, M.S., age 31, married, 4 years experience mapping, mineral property evaluation, and development in western U.S. Administrative experience. Commercial pilot with geologic reconnaissance and radiometric survey experience. Wish to associate with investment, consultant, or exploration group. Presently employed as Area-Geologist.

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